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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/521,308	03/09/2000	Bruce A. Fairman	50N3545/1309	2383

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EXAMINER

BANANKHAH, MAJID A

ART UNIT	PAPER NUMBER
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2127

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/521,308

Applicant(s)

FAIRMAN ET AL.

Examiner

Majid A Banankhah

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 May 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16, 18-36 and 38-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16, 18-36 and 38-55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 March 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) *
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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1. This office action in response to the Amendment filed on May 28, 2004.

Applicant's arguments concerning the rejection of claims have been fully considered but they are moot in view of the new ground of rejection. Claims 1-16, 18-36, 38-55 are presented for examination.

In response to Applicant's request regarding clarification on the Notice of Draftsman's Patent Drawing Review, it is submitted that the Examiner accepts the Drawings filed on March 3, 2000. This is indicated in the Office Action Summary PTOL-326 accompanied by this office action. The request to note PTO-948 in the office action mailed on April 23, 2002 is an inadvertent mistake and the Examiner regrets the error.

2. The text of those sections of Title 35, U.S. code not included in this office action can be found in a prior Office action.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 21, 41, 42, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Culbert in view of Durand (U.S. Pat. No. 6,338,080, hereinafter Durand).

The reference of Culbert teaches of:

A system for effectively utilizing resources in an electronic device (*See ABS., resource utilization, and col. 3, lines 28-33, resource utilization*), comprising: a resource

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characterization coupled to said electronic device, said resource characterization corresponding to a requested process, said resource characterization including resource requirements required for executing said requested process (*resource requirements which resource manager 170 uses to globally optimize resource utilization across all tasks*); an allocation manager configured to authorize or deny said requested process by referencing said resource characterization (*col. 11, lines 46-51, If there are now enough resources available, and the process executes step 530 to allocation the resources*), said requested process executing with optimal performance when authorized by said allocation manager (*See ABS of system resources and globally optimize resource allocation, according to a system specified performance model.*); and a processor coupled to said electronic device for controlling said allocation manager (*col. 6, lines 44-50, host processor 120*),

While Culbert teaches of resource reservation in col. 8, lines 19-23, he fails to explicitly teach of “guaranteed pre-allocated resources provided by said electronic device”. However, the reference of Durand et al. teaches of a method for managing resource by comparing the amount of resources required for the execution of a job for which the request has been presented to the current amount of resources available minus the total amount of resources pre-allocated to the other requests (col. 1, line 55 to col. 2, line 27). He further teaches that the job is denied execution when the result of the comparison is not favorable (col. 2, lines 25-27). He later teaches that by implementing this method, the **resource manager ensure that there will be enough resources for the execution of the job** (col. 5, lines 23-29). Therefore, it would have been obvious for one ordinary skill in the art at the time the invention was made to use the resource handling

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method of Durand for the reason to ensure the execution of the job without failure by having no resource. The reference of Durand also fails to teach of **non-degradable manner** in conjunction with “guaranteeing pre-allocated resource” (taught by Durand above). However, pre-allocating resource in a **non-degradable manner** is well known in the art, for the reason that jobs that must have resource because of priority or other reasons do not fails during the execution in case they need part of the resource which is used but released during execution.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-16, 18-20, 22-36, and 38-40, 44-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Culbert in view of Durand (U.S. Pat. No. 6,338,080), further in view of Colby et al. (U.S. Pat. No. 6,625,643, hereinafter Colby), and further in view of Komuro (U.S. Pat. No. 6,223,285, hereinafter Komuro).

As per claims 2, and 22 the claim the reference of Culbert in view of Durand fails to teach of electronic device is coupled to an electronic network, and that the electronic network is implemented according to an IEEE Std 1394 serial bus interconnectivity standard. However, Colbert in the same filed of endeavor teaches of as resource management on a data network, where the system manages broadcast of data over the network and uses Internet to transmit and receive electronic mail and network data and news (*See Colby Abs., Fig.1, Fig.4, and col. 3, lines 10-46*), for the reason to create

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access over the stream and managing broadcast events over a data network. Therefore, it would have been obvious for one ordinary skill in the art at the time the invention was made to implement the resource management device of Culbert into network environment of Colby, for the reason to be able to manage broadcast events and be able to broadcast stream more efficiently in the web environment.

Even though the IEE Std. 1394 serial bus is inherent in the Colby's reference (See, col. 1, lines 28-47), but he fails to explicitly teach of IEEE Std. 1394 serial bus, however, the Examiner is citing the reference of Komuro in order to show that these features are notoriously well known in the art, for the reason that information is transmitted in digital packets having certain header information and having data sections (*See, Komuro, col. 1, lines 13-25*).

Per claims 3, and 23 consumer electronic device and set top box is taught in *Komuro* (*See, Komuro, col. 1, lines 5, lines 5-16*). The reference of Colby teaches of Internet for the use of computer device.

Per claims 4, 24, and 44, wherein said requested process includes one or more time-sensitive isochronous processes for manipulating time-critical isochronous data.

Komuro teaches the use of isochronous data in col. 1, lines 25-43 (*AV data is transmitted such as movies*).

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Per claims 5, and 25 wherein said allocation manager compares said resource requirements to current available resources, said allocation manager authorizing said requested process only when said resource requirements are less than, or equal to, said current available resources, Culbert teaches the limitation in col. 11, lines 46-51 *(If there are now enough resources available, and the process executes step 530 to allocation the resources. Otherwise in step 570, the request for additional resources is denied).*

Per claims 6, and 26 wherein a software module generates a request to instantiate said requested process on said electronic device, the reference of Culbert teaches of the limitation in Fig. 5, teaches of a software program doing the comparison and request of the resources if there is need for more resource.

Per claims 7, and 27 wherein said request includes an identifier that corresponds to said resource characterization, the reference of Culbert teaches of the limitation in *(col. 11, lines 33-52).*

Per claims 8, 28 wherein said allocation manager evaluates said resource characterization in response to said request from said software module, the reference of Culbert teaches of evaluating the resources in col. 8, lines 24-32.

Per claims 9, and 29 wherein said resource characterization includes one or more resource listings and one or more corresponding resource usage values that are required for an optimal performance of said requested process. The reference of Culbert teaches of

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resource listing (Fig. 2, resource master list), usage value (*Fig. 2, resource indicator 220, Max units, 230, and current units 240*). Additionally, he teaches of resource utilization record in col. 8, lines 24-32.

Per claims 10, and 30 wherein said resource characterization includes resource information regarding total available resources from said electronic device, the reference of total available resource in col. 6, lines 51-58.

Per claims 11, 31, and 45, wherein said allocation manager compares resource usage values from said resource characterization and current available resource values from said electronic device to determine whether to authorize said requested process, the reference of Culbert teaches of the limitation in col. 11, lines 32-52.

Per claims 12, 32, and 46, wherein said current available resource values are initially set to be less than one-hundred percent of total device resources before any resource allocation is made, the reference of Culbert teaches of the limitation in col. 8, lines 19-23. Additionally, Durand teaches of setting an initial amount of resource "Ra" declared at the start by the user to the resource manager in order to aid in preventing failure due to the uncontrolled allocation of the resource or any other reasons such as essential non-isochronous tasks (See, Durand, col. 5, lines 52-59).

Per claims 13, 33 wherein said allocation manager authorizes said requested process whenever said resource usage values from said resource characterization are less than or

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equal to said current available resource values from said electronic device, Culbert teaches o the limitation in Fig. 3, and Fig. 5 (*See 540, COMPUTE ACTUAL USAGE AND DETERMINE AVAILABLE RESOURCES*).

Per claims 14, and 34 wherein said allocation manager denies said requested process whenever said resource usage values from said resource characterization are greater than said current available resource values from said electronic device, the reference of Culbert teaches of denying of the request in col. 12, lines 64-68, continued on col. 13, lines 1-3.

Per claims 15, and 45 wherein said allocation manager updates said available resource values with said resource usage values whenever said requested process is authorized by said allocation manager, Culbert teaches of updating available resource values and usage values in col. 8, lines 47-60 (*The Update Resource Measurements routine is activated by a timer on a periodic basis, and replaces the resource utilization record, at the current run level*).

Per claims 16, and 46 wherein a picokernel in said electronic device instantiates and executes said requested process after said allocation manager authorizes said requested process, Culbert teaches of kernel processor instantiating and executing the resource request (Fig. 1, 120).

Per claims 18-19, 38-39 wherein said allocation manager sequentially references a plurality of resource characterizations to handle a plurality of respective requested

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processes, and, wherein said allocation manager references a plurality of resource characterizations to handle said requested process, Culbert teaches of a plurality of resource characterization in Fig. 2, and Fig.3.

Per claims 20, and 40 wherein at least one of said resource characterization and said allocation manager is re-configurable to provide an altered functionality to said electronic device, Culbert teaches of the limitation in col. 8, lines 31-18.

Per claim 47, the reference of Culbert teaches of the limitation in col. 3, lines 61-68, continued on col. 4, lines 1-3.

Per claim 48, wherein said resource characterization is implemented as a two-dimensional array of descriptive parameters that include one or more first parameters that each identifies a resource type, said descriptive parameters also including one or more second parameters that each specifies an amount of resource usage required for said resource type during said requested isochronous process, Culbert teaches of the limitation in col. 6, lines 59-68, continued on col. 7, lines 1-13 (*resource Entry 210 contains the Resource indicator, 220 which could be a name or an index, the maximum number of allocable units, 230, and the currently allocated units 240*).

Per claim 49, the type of resource managed by the system does not constitute a patentable matter, however, the reference of Culbert teaches of the memory resource in col. 5, lines 49-65. And the references of Colby teaches of bandwidth requirement as

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resource in col. 1, lines 47-53, and Komuro teaches of other types of resources (See the abstract)

Per claim 50, wherein said resource characterization **includes one or more resource** usages that specify said one or more resource requirements for said requested isochronous process, said resource usages each being implemented as a ratio of a resource use amount for said requested isochronous process per a given time period that includes a process scheduling overhead for scheduling and instantiating said requested isochronous process with a picokernel program in said electronic device, Culbert teaches of limitation in col. 6, lines 59-68, continued on col. 7, lines 1-13.

Per claim 51, wherein said device software module generates an isochronous request to said allocation manager for instantiating said requested isochronous process on said electronic device, said isochronous request including a resource characterization identifier that corresponds to said resource characterization, said allocation manager responsively evaluating said resource characterization, in response to said isochronous request from said device software module, the reference of Culbert teaches of the limitation in col. 11, lines 33-52.

Per claim 52, wherein said allocation manager authorizes said requested isochronous process to said device software module whenever resource usage values from said resource characterization are less than or equal to said current available resources of said electronic device, said allocation manager denying said requested isochronous process to said device software module whenever said resource usage values from said resource

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characterization are greater than said current available resources of said electronic device, Culbert teaches the limitation in col. 11, lines 46-51.

Per claim 53, wherein said allocation manager generates a request fail signal to said device software module whenever said requested isochronous process is denied, the reference of Colby teaches of status message and sending error when the request is denied in col. 7, lines 31-40.

Per claim 54, wherein said allocation manager performs an available resource update procedure for updating said current available resources whenever said requested isochronous process is authorized by said allocation manager, said available resource update procedure reducing said current available resources by said one or more resource requirements for said requested isochronous process, Culbert teaches of updating available resource values and usage values in col. 8, lines 47-60 (*The Update Resource Measurements routine is activated by a timer on a periodic basis, and replaces the resource utilization record, at the current run level*).

Per claim 55, wherein said electronic device is coupled to an electronic network for receiving and transmitting isochronous data corresponding to said requested isochronous process, said one or more resource requirements in said resource characterization including one or more network resource requirements for other electronic entities in said electronic network, the reference of Colbert teaches of as resource management on a data network, where the system manages broadcast of data over the network and uses Internet to transmit and receive electronic mail and network data and news (*See Colby Abs., Fig. 1,*

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Fig. 4, and col. 3, lines 10-46), for the reason to create access over the stream and managing broadcast events over a data network.

5. Applicant in his Remarks on page 15 argues:

"In contrast, Applicants teach and claim a "resource characterization that includes one or more resource listings and one or more corresponding resource usage values that are required for an *"optimal performance in a non-degraded manner"* of said requested process.' Furthermore, Applicants teach and claim that *"said requested process executes with optimal performance due to guaranteed pre-allocated resources"*. For at least the foregoing reasons, Applicants submit that Culbert teaches away from Applicants' invention.

The foregoing arguments and comments are incorporated here by reference with regard to independent claim 43, which includes many of the same or similar limitations as independent claims 1, 21, and 41. Furthermore, with regard to independent claim 43, Applicants submit that Culbert nowhere mentions or teaches guaranteeing resources for "isochronous processes", as claimed by Applicants".

In response, applicant's attention is respectfully directed to the rejection of claims 1, 21, 41, and 43 in this office action and the newly cited reference of Durand. Durand in Col. 1, lines 55 to col. 2, line 27 and col. 5, line 23-29 teaches of guaranteeing pre-allocated resource.

Later on page 6 continued on page 7, Applicant argues:

With regard to claim 42, means-plus-function" language is utilized to recite elements and functionality similar to those recited in the other independent claims which are discussed above. Applicants therefore incorporate those remarks by reference with regard to claim 42. In addition, the Courts have frequently held that means-plus-function" language, such as that of claim 42, should be construed in light of the Specification. More specifically, means-plus-function claim elements should be construed to cover the corresponding structure, material or acts described in the specification, and equivalents thereof.

In response, unlike what Applicant argues, the means recited in claim 42 are not followed by the functionality similar to those recited in the other independent claim. For example, the referencing means is silent as to “allocation manager”, or as another example, the handling means is silent as to the functions recited in handling step in the independent method claims. Additionally, the Examiner has rejected all the steps of the method claims and there is indeed a structure associated with the functions in the method steps. For example, the reference of Culbert in col. 7, lines 20-44 teaches task utilization vector wherein any task can specify any number of resource in task utilization vector and these are all under the control of the resource manager. How it is possible to request a specific resource requirement without referencing that particular requirement. As another example, Culbert teaches the handling means in col. 11. Moreover, the newly cited reference of Durands also teaches of handling in a guaranteed pre-allocated manner in col. 1 line 55 to col. 2, line 27, and col. 5, line 23-29.

Applicant on page 18 argues:

Furthermore, with regard to claims 12, 22, and 46, Applicants submit that the cited references nowhere teach initially setting current available resource values to be less than one hundred of total device resources to reserve resources for essential non-isochronous tasks. In addition, with regard to claim 55, Applicants submit that the cited references fail to teach or disclose a networked electronic device with a resource characterization including one or more network resource requirements for other electronic entities in said electronic network as recited in claim 55.

In response, it is submitted that, the reference of Colby in col. 8. Lines 19-23 teach of this limitation and this was mentioned in the rejection of claims in the previous office action. Additionally, the newly cited reference of Duran teaches of setting an initial amount of resource “Ra” declared at the start by the user to the resource manager in order

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to aid in preventing failure due to the uncontrolled allocation of the resource or any other reasons such as essential non-isochronous tasks (See, Durand, col. 5, lines 52-59).

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Majid A. Banankhah** whose telephone number is (571) 272-3770. The examiner can normally be reached on Monday – Thursday, 8:00 AM – 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756.

Information regarding the status of an application may be obtained from the patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

Maid Banankhah


MAJID BANANKHAH
PRIMARY EXAMINER

8/31/04